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# Assessing the Role of Depth and Breadth of Vocabulary Knowledge in Reading Comprehension of Iranian EFL Learners

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This study was conducted to investigate the extent to which scores on depth and breadth of vocabulary knowledge as two dimensions of vocabulary knowledge would contribute to predicting the EFL learners' reading performance with a minimum vocabulary size of 3000 word families and also to find out the difference, if any, between the reading comprehension performance of two groups as having high and low depth and breadth of vocabulary knowledge. All instruments (Word-Associate Test (WAT) (Read, 1993) measuring depth of vocabulary knowledge (DVK), Vocabulary Levels Test (VLT) (Nation, 1983) measuring Vocabulary Size (VS), and Reading Comprehension Test (RC) were administered together within the same session to 38 Iranian senior university students. Then the gathered data were analyzed by a Pearson correlation and two independent t-tests. Results revealed that a) the interrelations among DVK, VS, and RC were high and positive; b) depth of vocabulary knowledge provided a significant contribution to the prediction of reading comprehension; and c) the students who had stronger depth and breadth of vocabulary knowledge performed better on reading comprehension. These findings provided empirical support for the importance of depth of vocabulary knowledge in reading comprehension. Regarding this, the necessity of incorporating this aspect into EFL programs and activities is desirable.

**Key Words:** reading comprehension, vocabulary breadth, vocabulary depth, vocabulary size.

## 1 Introduction

Vocabulary has long been considered as a prerequisite and strong determinant of reading achievement. While the relationship between both breadth and depth of vocabulary knowledge and reading comprehension has been a focus of

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investigation among L1 reading researchers (Beck, Perfetti, and McKeown, 1982; Mezynski, 1983), few studies have attempted to determine the role of depth of vocabulary knowledge in L2 research. The greater number of studies was in favor of the breadth of vocabulary knowledge.

Reading is one of the most important skills to be learned in any language. It is used not only as a source of information and pleasure but also as a means of consolidating and extending knowledge of the language. 'Reading is the construction of the meaning of text. It is an active and strategic process, in which the reader's skill and knowledge interact with the characteristics of the text such as genre, the wording and structure of the text' (Schellings, Aarnoutse, and Leeuwe, 2006:550). Comprehension is defined as ' intentional thinking during which meaning is constructed through interactions between text and reader' (Harris and Hodges, 1995:207).

According to Laufer (1997), reading comprehension (both in L1 and L2) is affected by the knowledge of vocabulary in a text, textually relevant background knowledge and the application of general reading strategies, such as predicting the content of the text, guessing unknown in context, making inferences, recognizing the type of text and text structure, and grasping the main idea of the paragraph. However, vocabulary knowledge has been regarded as the most important component of reading.

According to Anderson and Freebody (1981), cited in Laufer (1997), word variable is more predictive of comprehension than the sentence variable, the inferencing ability, and the ability to grasp main ideas. The importance of vocabulary knowledge has been a particular focus in the field of reading comprehension (Hu and Nation, 2000; Hirsh and Nation, 1992). Nassaji (2004) believes that one type of knowledge source that is intensively related to the learner's ability to read texts is vocabulary knowledge. It is specified that vocabulary is indispensable for reading comprehension. However, what it means to know a word.

Over the years, in order to state what it means to know a word, second language (L2) vocabulary researchers have proposed various but complementary ideas and theoretical frameworks. In these frameworks (e.g.,Richards,1976; Wesche and Paribakht,1996; Henriksen,1999; Qian,2002), there is a general agreement that vocabulary knowledge should be regarded as a multi-dimensional construct, therefore researchers no longer consider vocabulary knowledge having a single dimension.

As cited in Qian and Schedl (2004:30), based on collective strength of previous frameworks of vocabulary knowledge (Qian, 1999; Henriksen, 1999; Nation, 2001), Qian's (2002) recent conceptual framework was developed. It offers four connected dimensions of vocabulary knowledge:

1) vocabulary size, which refers to the number of words of which a learner has at least some superficial knowledge of meaning;

2) depth of vocabulary knowledge, which includes all lexical characteristics ,such as phonemic, graphemic, morphemic, syntactic, semantic, collocational, and phraseological properties, as well as frequency and register;
3) lexical organization, which refers to the storage, connection, and representation of words in the mental lexicon of a learner;
4) automaticity of receptive-productive knowledge, which refers to all the fundamental processes through which access to word knowledge is achieved for both receptive and productive purposes, including phonological and orthographic encoding and decoding, access to structural and semantic features from the mental lexicon, lexical-semantic integration and representation, and morphological parsing and composing.

Seemingly, this framework views the merit of depth of vocabulary knowledge as the primary aspect of vocabulary knowledge.

Ordonez et al (2002:719) consider breadth and depth as two key dimensions of vocabulary knowledge. They state that ' although lexical knowledge is most commonly thought of and assessed as a number of words known , or breadth of vocabulary, it is now increasingly clear that richness of the representation of the words known is also a key dimension of variability. We refer to this dimension as depth of vocabulary.'

The extent of one's knowledge of word meanings controls comprehension, however, there has been particular interest in whether there is a threshold level ,in terms of vocabulary size, which is sufficient to achieve adequate comprehension of L2 materials. Based on her empirical study, Laufer (1989:127) emphasized the importance of having a vocabulary large enough to provide coverage of 95% of the words in a text. Laufer and Hill (2000:44) state that 'The level at which good first language (L1) readers can be expected to transfer their reading strategy to L2 is 3000 word families or about 5000 lexical items'. Consequently, a threshold of 3000 word families is needed for minimum comprehension.

More and more research is finding that adequate vocabulary knowledge is one of the most essential components of reading comprehension. Richek (2005) highlights that vocabulary knowledge is one of the best predictors of reading achievement. Having a comprehensive review of research on vocabulary development, Bromely (2004) comes to an end that vocabulary knowledge promotes reading fluency, enhances reading comprehension, and improves academic success. Since knowing the meanings of words links directly to reading comprehension, vocabulary represents a critical component to developing reading achievement (Beck, Perfetti, and McKeown, 1982).

‘It is clear that a large and rich vocabulary is the hallmark of an individual. Indeed, a large vocabulary repertoire facilitates becoming an educated person to the extent that vocabulary knowledge is strongly related

to reading proficiency in particular and school achievement in general' (Beck, McKeown, and Kucan, 2002:1).

In L2 research, mostly the importance of breadth of vocabulary knowledge in reading comprehension has been emphasized (Liu and Nation, 1985). Based on the findings from her study on the relationship between vocabulary size and reading comprehension, Laufer (1996, 1992), cited in Qian (1999), found results indicating relatively high interrelations between the two factors.

Mortazavi (2006) examined the relationship between vocabulary learning strategies and vocabulary size of Iranian EFL students. Her study showed that there was a relationship between vocabulary learning strategy and vocabulary size, that is, participants who used a variety of strategies instead of relying on a limited number of them possessed a more extensive vocabulary size and were able to expand their vocabulary knowledge more.

In comparison, few studies (Qian, 1999, 2002; Ouellette, 2006; Farahani, 2006) investigate the relationship between depth of vocabulary knowledge and reading comprehension. Qian (1999, 2002) has focused that in reading comprehension both depth and breadth of vocabulary knowledge play important roles, and that the aspects of depth of knowledge, synonymy and polysemy and collocation, are important variables.

Ouellette (2006) distinguished between breadth and depth of vocabulary knowledge to better explain the role of vocabulary in various reading skills. The analyses revealed that each distinct reading skill was related to the vocabulary measures in a unique manner. Receptive vocabulary breadth was the only oral vocabulary variable that predicted decoding performance after controlling for age and nonverbal intelligence. In contrast, expressive vocabulary breadth predicted visual word recognition, whereas depth of vocabulary knowledge predicted reading comprehension.

Farahani (2006) investigated the relationship between depth of vocabulary knowledge and Iranian learners' lexical inferencing strategy use and success. Her findings showed that there was a significant relationship between depth of vocabulary knowledge and the type of lexical inferencing strategy use. In other words, those who had stronger depth of vocabulary knowledge used certain types of lexical inferencing strategies more frequently than those who had weaker depth of vocabulary knowledge and these strategies made them more successful in inferring the meaning of unknown words.

Tannenbaum (2006) examined the relationships between three dimensions of word knowledge (breadth, depth and fluency) and reading comprehension in third-grade children. The results showed that a two-factor model of breadth and depth /fluency provides the best fit to the data. Breadth had a stronger relationship to reading comprehension than did depth/ fluency; however, the two dimensions of word knowledge share important information that contributes to the prediction of reading comprehension.

# Assessing the Role of Depth and Breadth of Vocabulary Knowledge in Reading Comprehension of Iranian EFL Learners

Few studies have been recorded on the relationship between depth and breadth of vocabulary knowledge (Nurweni and Read, in press; Qian, 1999). Using a self-made translation-based vocabulary size test of 200 items and a depth of vocabulary knowledge test, Read (1993), Nurweni and Read (in press) found a relatively high correlation between the scores on the two tests (r=.62, n=324). Qian (1999) indicated that ESL learner's dimensions of breadth and depth of vocabulary knowledge are strongly associated.

Although researchers have attributed an important role to depth of vocabulary knowledge, the nature of this concept has not been well understood in second language acquisition. Having reviewed the related literature concerning different angles of vocabulary including size and depth of it on the performance of EFL learners, the present researchers found less curiosity about these aspects of vocabulary and their relationship with reading comprehension. Consequently, it was an incentive for them to probe this issue among Iranian EFL learners.

## 1.1 The present study

Because of the importance of vocabulary knowledge in L2 reading comprehension, the present study was conducted to find out the EFL learner's size of vocabulary knowledge and determine the EFL learner's depth of vocabulary knowledge ( including collocation, and meaning).Then, it wants to assess the interrelations among vocabulary size, depth of vocabulary knowledge, and reading comprehension, and identify the extent to which scores on depth of vocabulary knowledge would improve the prediction of reading comprehension levels already provided by vocabulary size scores. Finally, the research aims at finding out the difference between the reading comprehension scores of two groups as having high and low depth and breadth of vocabulary knowledge.

Considering the objectives of the present study, the following research questions were postulated:

1) To what extent do scores on depth and breadth of vocabulary knowledge, and reading comprehension interrelate with one another?
2) To what extent do scores on depth of vocabulary knowledge contribute to predicting the performance on reading comprehension?
3) To what extent do scores on vocabulary size contribute to predicting the performance on reading comprehension?
4) What is the difference between the reading comprehension scores of two groups as having high and low depth and breadth of vocabulary knowledge?

## 2 Method

### 2.1 Participants

The participants in this study were 71 students - male and female- from one language background, Persian. They were randomly selected from senior university students majoring in English to participate in a proficiency test. First the proficiency test was given to the students. Then, 38 of them who were at the same level of proficiency (Intermediate) were selected to attend the testing sessions, Word Level Test (Appendix A), Word Associate Test (Appendix B), and Reading Comprehension Test. To do this, the scores were arranged in the order of size, from the highest (56) to the lowest (21). After that their ranks were calculated according to Farhadi et al. (2000:44) .There were 25 ranks. Then, 27% of ranks were calculated (7 ranks). The first 7 ranks were considered advanced scores (including 12 scores), the last 7 ranks were considered low scores (including 21 scores) and those in between, were considered intermediate subjects of the present study. The intermediate group consisted of 38 students who were the main subjects of the study. They participated in three tests, DVKT, VST, and RCT, administered in the same session.

### 2.2 Instrument

Four kinds of tests were used in the present study:
1) Language proficiency test
A standard language proficiency test, Longman TOEFL Test was used to measure the subjects' level of proficiency.

2) Vocabulary size (VS) test
Originally called the Vocabulary Levels Test (Nation, 1983, cited in Qian 2002).This English vocabulary size test (VS) has been used to measure the learner's size of vocabulary knowledge. The vocabulary size test is composed of five different levels, namely, the 2000 word-family level, the 3000 word-family level, the 5000 word-family level, the university word list level, and the 10000 word-family list. This test is a revised version of Nation's Vocabulary Levels Test (VLT) by Schmitt et al (2001), and has 150 items. VLT has a reliability of above .90. An equivalent version of the test developed by Norbert Schmitt was used to confirm the validity of VLT. The reported Pearson Product Moment correlation between the two tests is above .95. The test has been accepted by a number of L2 researchers as an appropriate and valid measure of vocabulary size (e.g., Laufer and Paribakht, 1998; Qian, 1999). Qian (1999) also obtained a reliability of 0.92 for the measure.

3) Depth of vocabulary-knowledge (DVK) test
Originally called the Word Associates Test (WAT), and developed by Read (1993). The WAT measures the learner's depth of vocabulary knowledge through word associations, that is, the various semantic and collocational relationships that a word has with other words in the language. In the present study a 50 item Word-Associate-Test version 3.1 was used to measure the learner's depth of vocabulary knowledge. The test is composed of 50 target words, each followed by a list of eight words, four of which are semantically related to the target word while the other four are not. According to Qian (1999), the test is closely correlated with another test of L2 reading comprehension ability. This correlation shows that the test is valid. Its reliability, as reported by Read (1993), is 0.92.

4) Reading comprehension (RC) test
This test is a standardized reading comprehension test taken from the TOEFL consisting of five passages with multiple-choice questions.

### 2.3 Procedure of data analysis

The statistical procedures underlying the data were a Pearson product-moment correlation and two separate independent t-tests. First, the relationship between DVK, VS, and RC scores was computed using Pearson correlation. Next, two separate independent t-tests were carried out to compare the means obtained from two groups' reading performance with high and low depth and breadth of vocabulary knowledge.

## 3 Results and Discussion

The results of the analysis of the data are as follows:

Table 1. Summary of the Data

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| READING | 38 | 6.00 | 18.00 | 13.9211 | 3.39619 |
| DEPTH | 38 | 115.00 | 168.00 | 144.6053 | 14.65742 |
| SIZE | 38 | 70.00 | 116.00 | 99.3158 | 13.98282 |
| Valid N (listwise) | 38 | | | | |

According to Table 1, the average amount of variation from the mean score (SD) for each variable is not so great, and the individual scores are distributed not far from the mean.

*Interrelations*

In order to examine the existence and the degree of correlation between DVK (Depth of Vocabulary Knowledge), VS (Vocabulary Size), and RC (Reading Comprehension), Pearson Correlation was used. Table 2 shows the correlation.

Table 2. Correlation between DVK, VS and RC

| | | READING | DEPTH | SIZE |
|---|---|---|---|---|
| READING | Pearson correlation | 1 | .873** | .753** |
| | Sig. (2-tailed) | . | .000 | .000 |
| | N | 38 | 38 | 38 |
| DEPTH | Pearson correlation | .873** | 1 | .814** |
| | Sig.(2-tailed) | .000 | . | .000 |
| | N | 38 | 38 | 38 |
| SIZE | Pearson correlation | .753** | .814** | 1 |
| | Sig.(2-tailed) | .000 | .000 | . |
| | N | 38 | 38 | 38 |

****** Correlation is significant at the. 01 level (2-tailed)

As shown in Table 2, there is a positive correlation of .87 between the scores on the DVK and RC, and also a positive correlation of .75 between the scores on the VS and RC ($p < .01$). This shows that the RC increases as the DVK increases or/and VS increases .In other words, Pearson correlational analyses also represent a high correlation .81 between the scores on the two vocabulary measures, the DVK, and VS ($p < .01$). It further emphasizes the positive association and interconnection of these two measures. Overall, the interrelations among the three variables appear to be fairly high and statistically significant.

Table 3 presents values of $R^2$ of the correlation coefficients. These $R^2$ values answer research questions 2 and 3: To what extent do scores on depth of vocabulary knowledge and on vocabulary size contributes to predicting the performance on reading comprehension?

Table 3. $R^2$ of Correlation Coefficients between each Predictor Variable and the Criterion Variable

| Criterion variable | Predictor variable | $R^2$ |
|---|---|---|
| RC | DVK | .69 |
| | VS | .55 |

According to Table 3, .69 provides an estimate of the proportion of overlapping variance between DVK and RC scores. The coefficient of determination of .69 interprets that 69% of the variance in DVK test is shared with RC test. Therefore,

DVK accounts for about 69% of the variance in the criterion variable which is reading comprehension.

The coefficient of determination of .55 represents the proportion of overlap between VS scores and RC scores. It also interprets that 55% of the variance in VS test is shared with RC test. Therefore, VS accounts for about 55% of the variance in reading comprehension. Based on these results, it can be claimed that vocabulary is an important factor in reading assessment. Since scores on the depth and breadth of vocabulary knowledge can account for a considerable portion of over 50% of the variance in reading comprehension scores, depth of vocabulary can be considered as a good predicator of reading performance. Therefore, the depth of vocabulary knowledge is as important as vocabulary size. Although the slightly higher correlation coefficients found in the present study between DVK and reading comprehension assume that the DVK is superior to the VS and depth has a stronger relationship to reading comprehension than does breadth, both dimensions of word knowledge have significant variance that contributes to reading comprehension to be better predicted. The two measures are closely associated together and with reading comprehension.

*Grouping participants according to their depth of vocabulary knowledge and vocabulary size*

Based on their performance on DVK and VS and percentile ranks, the participants were grouped into high and low, that is, the percentile rank of the students' scores of 146 on DVK was 50.0. So, 19 participants who scored above this point were considered as having a high depth of vocabulary and 19 who scored at and below this point were considered as having a low depth of vocabulary. In relation to VS score, the percentile rank of vocabulary size score of 102 was 52.2%, so 18 participants who scored above this point were considered a high group and 20 who scored at and below this point were considered as having a low vocabulary size.

*t-test procedure*

To determine the difference between two groups' reading performance with high and low depth and breadth of vocabulary knowledge, two independent t-tests were run. The results are presented in Table 4.

Table 4. Group Statistics

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| DVK | High | 19 | 157.0526 | 5.19052 | 1.19079 |
| scores | Low | 19 | 132.1579 | 9.35867 | 2.14703 |
| Reading | High | 19 | 16.2632 | 1.19453 | .27404 |
| scores | low | 19 | 11.5789 | 3.27135 | .75050 |

Table 5.t-test for Equality of Means

| | | t-test for Equality of Means | | | | |
|---|---|---|---|---|---|---|
| | | t | df | Sig. (2-tailed) | Mean difference | Std. Error Difference |
| DVK scores | Equal variances assumed | 10.140 | 36 | .000 | 24.8947 | 2.45514 |
| | Equal variances not assumed | 10.140 | 28.117 | .000 | 24.8947 | 2.45514 |
| Reading scores | Equal variances assumed | 5.863 | 36 | .000 | 4.6842 | .79897 |
| | Equal variances not assumed | 5.863 | 22.716 | .000 | 4.6842 | .79897 |

The results obtained in Tables 4 and 5 showed that participants have considerably higher mean scores in high groups than in low groups. Moreover, the learners who were more proficient in terms of depth of vocabulary knowledge performed better on reading comprehension tests.

Table 6. Group Statistics

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| VS scores | High | 18 | 111.2778 | 3.21404 | .75756 |
| | Low | 20 | 88.5500 | 10.67449 | 2.38689 |
| Reading scores | High | 18 | 15.8889 | 1.71117 | .40333 |
| | Low | 20 | 12.1500 | 3.58762 | .80222 |

Table 7. t-test for Equality of Means

| | | t-test for Equality of Means | | | | |
|---|---|---|---|---|---|---|
| | | t | df | Sig. (2-tailed) | Mean difference | Std. Error Difference |
| VS scores | Equal variances assumed | 8.676 | 36 | .000 | 22.7278 | 2.61969 |
| | Equal variances not assumed | 9.076 | 22.762 | .000 | 22.7278 | 2.50422 |
| Reading scores | Equal variances assumed | 4.025 | 36 | .000 | 3.7389 | .92898 |
| | Equal variances not assumed | 4.164 | 27.832 | .000 | 3.7389 | .89790 |

As shown in Tables 6 and 7, the participants have considerably higher mean scores in high groups than in low groups. Additionally, the learners with higher and stronger breadth of vocabulary knowledge performed better in reading comprehension tests. Acknowledging the role that vocabulary plays in reading comprehension, these results identify deficiencies in learner's vocabulary knowledge as a hindrance to comprehension. Besides, they ascertain that the growth in vocabulary knowledge matches more reading comprehension. Thus, differences in vocabulary knowledge are salient in explaining the perceived differences in reading comprehension.

Overall, the results indicate that there is a statistically significant difference between the reading comprehension scores of two groups as having high and low depth and breadth of vocabulary knowledge. This means that how learner's depth and breadth of vocabulary knowledge relate to the degree of reading comprehension. In other words, both vocabulary depth (representing the meaning and collocation components of DVK) and size measures are valid and powerful in predicting reading performance.

## 4 Conclusions

These findings nudge us into accepting the notion that vocabulary is the building block of language. Considering the relationship between vocabulary and reading comprehension as a "robust" one, Stahl (2003) claims that vocabulary knowledge has consistently been the "foremost predictor of a text's difficulty".

To address the first research question, the present study highlights that depth and breadth of vocabulary knowledge have moderately positive and significant correlations with reading comprehension in English as a foreign language (EFL).

The magnitudes of $R^2$ value answered research questions 2 and 3, that is, DVK accounts for about 69% and VS 55% of the variance in RC scores. It showed that while measures of size of vocabulary knowledge are strongly related to the reader's comprehension of text, measures examining aspects of depth of vocabulary knowledge make a stronger contribution to reading performance than those that simply measure a single definition of a word. Therefore, both the vocabulary depth and size measures are valid in a predictive sense.

Moreover, based on findings of this study , it could be argued that the difference in reading comprehension scores of two groups( having high and low depth and breadth of vocabulary knowledge) can be related to the difference between the two in terms of their depth and breadth of vocabulary knowledge. Therefore, the scores on depth of vocabulary knowledge can improve the prediction of reading comprehension levels. As a result it is noteworthy to state that learners need to have a good knowledge of high frequency words along with adequate additional vocabulary to read and

comprehend efficiently. The above findings are in accordance with the previous research results (Richek, 2005; Bromley, 2004) in that they put emphasis on vocabulary knowledge as one of the best predictors of reading achievement. Moreover, they seem to be consistent with the view that depth of vocabulary knowledge contributes significantly to test-takers' performance in the assessment of reading comprehension. (Qian, 1999, 2002; Ouellette, 2006).

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# Assessing the Role of Depth and Breadth of Vocabulary Knowledge in Reading Comprehension of Iranian EFL Learners

## Appendix A

### Vocabulary Size

**Student instruction sheet for the Levels Test**

This is a vocabulary test. You must choose the right word to go with each meaning. Write the number of that word next to its meaning.

Here is an example :

1 business
2 clock …… part of a house
3 horse …….animal with four legs
4 pencil ……something used for writing
5 shoe
6 wall

You answer it in the following way :

1 business
2 clock …6… part of a house
3 horse …3… animal with four legs
4 pencil …4…something used for writing
5 shoe
6 wall

Some words are in the test to make it more difficult. You do not have to find a meaning for these words. In the example above, these words are *business, clock, and shoe.*

If you have no idea about the meaning of a word, do not guess. But if you think you know the meaning, then you should try to find the answer.

**The Vocabulary Level Test : Version 2 (© Norbert Schmitt)**

**The 2000 word level**

| | | | | | |
|---|---|---|---|---|---|
| 1 | copy | ….. end or highest | 1 | accident | ….. loud deep sounds |
| 2 | event | point | 2 | debt | ….. something you |
| 3 | motor | ….. this moves a car | 3 | fortune | must pay |
| 4 | pity | ….. thing made to | 4 | pride | ….. having a high |
| 5 | profit | be like another | 5 | roar | opinion of |
| 6 | tip | | 6 | thread | yourself |

| | | | | | |
|---|---|---|---|---|---|
| 1 | coffee | ….. money for | 1 | arrange | ….. grow |
| 2 | disease | work | 2 | develop | ….. put in order |
| 3 | justice | ….. a piece of | 3 | lean | ….. like more than |
| 4 | skirt | clothing | 4 | owe | something else |
| 5 | stage | ….. using the law | 5 | prefer | |
| 6 | wage | in the right way | 6 | seize | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | clerk | …. a drink | 1 | blame | ….. make |
| 2 | frame | ….. office worker | 2 | elect | ..… choose by |
| 3 | noise | ….. unwanted | 3 | fortune | voting |
| 4 | respect | sound | 4 | threaten | ….. become like |
| 5 | theater | | 5 | melt | water |
| 6 | wine | | 6 | manufacture | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | dozen | ….. chance | 1 | ancient | ….. not easy |
| 2 | empire | ….. twelve | 2 | curious | ….. very old |
| 3 | gift | ….. money paid to | 3 | difficult | ….. related to God |
| 4 | tax | the government | 4 | entire | |
| 6 | opportunity | | 5 | holy | |
| | | | 6 | social | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | admire | ….. make wider or | 1 | slight | ….. beautiful |
| 2 | complain | longer | 2 | bitter | ….. small |
| 3 | fix | ….. bring in for | 3 | lovely | ….. liked by many |
| 4 | hire | the first time | 4 | merry | people |
| 5 | introduce | ….. have a high | 5 | popular | |
| 6 | stretch | opinion of someone | 6 | independent | |

**The 3000 word level**

| | | | |
|---|---|---|---|
| 1 bull | ….. formal and | 1 muscle | ….. advice |
| 2 champion | serious manner | 2 counsel | ….. a place |
| 3 dignity | ….. winner of a | 3 factor | covered with |
| 4 hell | sporting event | 4 hen | grass |
| 5 museum | ….. building where | 5 lawn | ….. female |
| 6 solution | valuable objects are shown | 6 atmosphere | chicken |

| | | | |
|---|---|---|---|
| 1 blanket | ….. holiday | 1 abandon | ….. live in a place |
| 2 contest | ….. good quality | 2 dwell | ….. follow in |
| 3 generation | ….. wool covering | 3 oblige | order to catch |
| 4 merit | used on beds | 4 pursue | ….. leave |
| 5 plot | | 5 quote | something |
| 6 vacation | | 6 resolve | permanently |

| | | | |
|---|---|---|---|
| 1 comment | ….. long formal | 1 assemble | ….. look closely |
| 2 gown | dress | 2 attach | ….. stop doing |
| 3 import | ….. goods from a | 3 peer | something |
| 4 nerve | foreign | 4 quit | ….. cry out loudly |
| 5 pasture | country | 5 scream | in fear |
| 6 tradition | ….. part of the body which carries feeling | 6 toss | |

| | | | |
|---|---|---|---|
| 1 pond | ….. group of animals | 1 drift | ….. suffer patiently |
| 2 angel | ….. spirit who serves | 2 endure | ….. join wool |
| 3 frost | God | 3 grasp | threads together |
| 4 herd | ….. managing | 4 knit | ….. hold firmly |
| 5 fort | business and affairs | 5 register | with your hands |
| 6 administration | | 6 tumble | |

| | | | |
|---|---|---|---|
| 1 brilliant | ….. thin | 1 aware | ….. usual |
| 2 distinct | ….. steady | 2 blank | ….. best or most |
| 3 magic | ….. without clothes | 3 desperate | important |
| 4 naked | | 4 normal | ….. knowing what |
| 5 slender | | 5 striking | is happening |
| 6 stable | | 6 supreme | |

**The 5000 word level**

| | |
|---|---|
| 1 analysis | ….. eagerness |
| 2 curb | ….. loan to buy a |
| 3 gravel | house |
| 4 mortgage | ….. small stones |
| 5 scar | mixed with |
| 6 zeal | sands |

| | |
|---|---|
| 1 artillery | ….. a kind of tree |
| 2 creed | patiently |
| 3 hydrogen | ….. system of |
| 4 maple | belief |
| 5 pork | ….. large gun |
| 6 steak | wheels |

| | |
|---|---|
| 1 cavalry | ….. small hill |
| 2 eve | ….. day or night |
| 3 ham | before a |
| 4 mound | holiday |
| 5 steak | ….. soldiers who |
| 6 switch | fight from |
| | horses |

| | |
|---|---|
| 1 chart | ….. map |
| 2 forge | ….. large beautiful |
| 3 mansion | house |
| 4 outfit | ….. place where |
| 5 sample | metals are |
| 6 volunteer | made and shape |

| | |
|---|---|
| 1 circus | ….. musical |
| 2 jungle | instrument |
| 3 trumpet | ….. seat without |
| 4 sermon | a back or |
| 5 stool | arms |
| 6 nomination | ….. speech |

| | |
|---|---|
| 1 revive | …..think about |
| 2 extract | deeply |
| 3 gamble | ….. bring back to |
| 4 launch | health |
| 5 provoke | ….. make someone |
| 6 contemplate | angry |

| | |
|---|---|
| 1 shatter | ….. have a rest |
| 2 embarrass | ….. break |
| 3 heave | suddenly into |
| 4 obscure | small pieces |
| 5 demonstrate | ….. make |
| 6 relax | someone feel |
| | shy or nervous |

| | |
|---|---|
| 1 decent | ….. weak |
| 2 frail | ….. concerning a city |
| 3 harsh | ….. difficult to |
| 4 incredible | believe |
| 5 municipal | |
| 6 specific | |

| | |
|---|---|
| 1 correspond | ….. exchange |
| 2 embroider | letters |
| 3 lurk | ….. hide and wait |
| 4 penetrate | for someone |
| 5 prescribe | ….. feel angry |
| 6 resent | about |
| | something |

| | |
|---|---|
| 1 adequate | ….. enough |
| 2 internal | ….. fully grown |
| 3 mature | ….. alone away |
| 4 profound | from other |
| 5 solitary | things |
| 6 tragic | |

# Assessing the Role of Depth and Breadth of Vocabulary Knowledge in Reading Comprehension of Iranian EFL Learners

**Academic Vocabulary**

| | |
|---|---|
| 1 area | ….. written |
| 2 contract | agreement |
| 3 definition | ….. way of doing |
| 4 evidence | something |
| 5 method | ….. reason for |
| 6 role | believing |
| | or is not true |

| | |
|---|---|
| 1 adult | ….. end |
| 2 vehicle | ….. machine used |
| 3 exploitation | to move people |
| 4 infrastructure | or goods |
| 5 termination | ….. list of things |
| 6 schedule | to do at |
| | certain times |

| | |
|---|---|
| 1 debate | ….. plan |
| 2 exposure | ….. choice |
| 3 integration | ….. joining |
| 4 option | something |
| 5 scheme | into a whole |
| 6 stability | |

| | |
|---|---|
| 1 alter | ….. change |
| 2 coincide | ….. say something |
| 3 deny | is not true |
| 4 devote | ….. describe |
| 5 release | clearly and |
| 6 specify | exactly |

| | |
|---|---|
| 1 access | ….. male or |
| 2 gender | female |
| 3 psychology | ….. study of the |
| 4 license | mind |
| 5 orientation | ….. entrance or |
| 6 implementation | way in |

| | |
|---|---|
| 1 correspond | ….. keep |
| 2 diminish | ….. match or be |
| 3 emerge | in agreement |
| 4 highlight | with |
| 5 invoke | ….. give special |
| 6 retain | attention to |
| | something |

| | |
|---|---|
| 1 edition | ….. collecting |
| 2 accumulation | things over time |
| 3 guarantee | ….. promise to |
| 4 media | repair a |
| 5 motivation | broken product |
| 6 phenomenon | …..feeling a |
| | reason or need |
| | to do something |

| | |
|---|---|
| 1 bond | ….. make smaller |
| 2 channel | ….. guess the |
| 3 estimate | number or size |
| 4 identify | of something |
| 5 mediate | …… recognizing |
| 6 minimize | and naming a |
| | person or thing |

| | |
|---|---|
| 1 explicit | ….. last |
| 2 final | ….. stiff |
| 3 negative | ….. meaning |
| 4 professional | *no* or *not* |
| 5 rigid | |
| 6 sole | |

| | |
|---|---|
| 1 abstract | ….. next to |
| 2 adjacent | ….. added to |
| 3 neutral | ….. concerning |
| 4 global | the whole |
| 5 controversial | world |
| 6 supplementary | |

**The 10000 word level**

| | |
|---|---|
| 1 alabaster ….. small barrel | 1 throttle ….. kindness |
| 2 tentacle ….. soft white | 2 convoy ….. set of musical |
| 3 dogma stone | 3 lien notes |
| 4 keg ….. tool for | 4 octave ….. speed control |
| 5 rasp shaping wood | 5 stint for an engine |
| 6 chandelier | 6 benevolence |

| | |
|---|---|
| 1 bourgeois ….. middle class | 1 scrawl ….. write |
| 2 brocade people | 2 cringe carelessly |
| 3 consonant ….. row or level | 3 immerge ….. move back |
| 4 prelude of something | 4 peek because of |
| 5 stupor ….. cloth with a | 5 contaminate fear |
| 6 tier pattern or threads | 6 relay ….. put something under water |

| | |
|---|---|
| 1 alcove ….. priest | 1 blurt …..walk in a |
| 2 impetus ….. release from | 2 dabble proud way |
| 3 maggot prison early | 3 dent ….. kill by |
| 4 parole ….. medicine to | 4 pacify squeezing |
| 5 salve put on | 5 strangle someone's throat |
| 6 vicar wounds | 6 swagger….. say suddenly without thinking |

| | |
|---|---|
| 1 alkali ….. light joking talk | 1 illicit ….. immense |
| 2 banter ….. a rank of British | 2 lewd ….. against the |
| 3 coop nobility | 3 mammoth law |
| 4 mosaic ….. picture made | 4 slick ….. wanting revenge |
| 5 stealth of small pieces | 5 temporal |
| 6 viscount of glass or stone | 6 vindictive |

| | |
|---|---|
| 1 dissipate ….. steal | 1 indolent ….. lazy |
| 2 flaunt ….. scatter or | 2 nocturnal ….. no longer used |
| 3 impede vanish | 3 obsolete ….. clever and |
| 4 loot ….. twist the | 4 torrid tricky |
| 5 squirm body about | 5 translucent |
| 6 vie uncomfortably | 6 wily |

# Assessing the Role of Depth and Breadth of Vocabulary Knowledge in Reading Comprehension of Iranian EFL Learners

**Appendix B**

**Vocabulary Depth**

WORD ASSOCIATES TEST

Practice Sheet

In a few minutes, you will be doing a vocabulary test. Since it is a new kind of test, the purpose of this practice sheet is to let you know what sort of items it contains and how you should answer them.

This is a test of your knowledge of words that are commonly found in academic writing. In each item, you are given one underlined word, followed by a list of eight other words. Four of the words are related to the underlined word and the other four are not related to it.

Put circles around the FOUR (4) related words.

Here are three practice items. See if you can find the four words that are related to each underlined word.

Don't write in the boxes; for marker's use only.

A fish

| | | | |
|---|---|---|---|
| answer | catch | desk | food |
| meeting | person | sea | shark |

A repeat

| | | | |
|---|---|---|---|
| action | again | fair | know |
| mountain | same | say | seat |

A serious

| | | | |
|---|---|---|---|
| bad | cousin | electric | illness |
| insect | problem | taxi | thoughtful |

When you have finished, your teacher will give you the answers to these items and discuss any problems you may have had in finding the answers.

Version 3.1
Form B

WORD ASSOCIATES TEST

Name_____
Class No._____

This is a test of your knowledge of words that are commonly found in academic writing. In each item, you are given one underlined word, followed by a list of eight other words. Four of the words are related to the underlined word and the other four are not related to it.
Put circles around the FOUR (4) related words, as in the example below:

Don't write in the boxes;

A fish — for marker's use only.

| | | | | |
|---|---|---|---|---|
| answer | catch | desk | food | |
| meeting | person | sea | shark | |

NOTE:

1 Do not put circles round more than four words in each item.
2 Try to give as many answers as you can, even if you are not sure whether the answer is correct or not.

You have 30 minutes to do the test.

1 diagram

| | | | | |
|---|---|---|---|---|
| design | drawing | figure | illustrate | |
| inconsistent | noisy | seek | shelter | |

2 enable

| | | | | |
|---|---|---|---|---|
| allow | authorize | facilitate | identical | |
| magic | opportunity | smell | source | |

3 establish

| | | | | |
|---|---|---|---|---|
| create | discover | evaporate | found | |
| interesting | passenger | permanent | x-ray | |

4 fertile

| | | | | |
|---|---|---|---|---|
| class | creative | growth | imperial | |
| priority | reproduce | soil | thread | |

5 graph

| | | | | |
|---|---|---|---|---|
| burst | diagram | line | mathematics | |
| measures | spontaneous | stress | victory | |

6 income

| | | | | |
|---|---|---|---|---|
| conduct | investment | job | object | |
| prohibited | recognize | salary | tax | |

7 injure

| | | | | |
|---|---|---|---|---|
| accident | body | bubble | hurt | |
| impulse | permission | sold | wound | |

8 lecture

| | | | | |
|---|---|---|---|---|
| academic | back | climate | criticize | |
| discourse | orbit | spectrum | talk | |

9 method

| | | | | |
|---|---|---|---|---|
| gravity | loudly | process | solar | |
| square | style | system | technique | |

10 obtain

| | | | | |
|---|---|---|---|---|
| achieve | acquire | deep | gain | |
| incident | information | liable | second | |

11 physical

| | | | | |
|---|---|---|---|---|
| body | earth | holiday | ignore | |
| material | outside | prevail | tangible | |

12 predict

| | | | |
|---|---|---|---|
| air | forecast | future | happening |
| index | liberate | rule | speculate |

13 project

| | | | |
|---|---|---|---|
| assignment | atmosphere | concentrate | govern |
| inverse | scheme | study | undertaking |

14 radius

| | | | |
|---|---|---|---|
| arouse | centre | circle | crisis |
| line | measure | reaction | war |

15 route

| | | | |
|---|---|---|---|
| ashamed | channel | drown | excess |
| map | path | synthetic | transport |

16 select

| | | | |
|---|---|---|---|
| boil | choose | ethics | labour |
| limited | money | option | superior |

17 source

| | | | |
|---|---|---|---|
| absolute | behave | derive | elevate |
| energy | mobile | origin | river |

18 team

| | | | |
|---|---|---|---|
| alternative | chalk | ear | group |
| orbit | scientists | sport | together |

19 transport

| | | | |
|---|---|---|---|
| bar | carry | commodities | distribution |
| expel | legislate | scarcely | train |

20 aspect

| | | | | |
|---|---|---|---|---|
| appearance | err | feature | mat | |
| muscles | sale | side | viewpoint | |

21 bread

| | | | | |
|---|---|---|---|---|
| assume | generate | mental | plants | |
| reproduce | sound | variety | visual | |

22 channel

| | | | | |
|---|---|---|---|---|
| clinic | communicate | control | intellect | |
| irrigation | passage | strict | wood | |

23 cooperate

| | | | | |
|---|---|---|---|---|
| act | boiled | initial | purpose | |
| reservoir | shared | test | together | |

24 distinct

| | | | | |
|---|---|---|---|---|
| clear | contrast | definite | explicit | |
| grant | loose | occupy | storm | |

25 friction

| | | | | |
|---|---|---|---|---|
| assemble | conflict | freedom | policy | |
| resistance | rub | surfaces | used | |

26 vital

| | | | | |
|---|---|---|---|---|
| alive | built | crucial | energy | |
| garden | institute | revolt | statistics | |

27 abandon

| | | | | |
|---|---|---|---|---|
| cease | commitment | desert | flame | |
| hour | journal | leave | prosper | |

28 adhere

| | | | |
|---|---|---|---|
| assume | attached | divide | firm |
| hold | obey | provide | upsurge |

29 alcohol

| | | | |
|---|---|---|---|
| building | chemical | code | drunk |
| liquid | participate | ruler | wine |

30 anthropology

| | | | |
|---|---|---|---|
| approach | base | culture | human |
| inner | layer | research | social |

31 attain

| | | | |
|---|---|---|---|
| achieve | federal | gain | negative |
| objective | picture | reach | tolerate |

32 collide

| | | | |
|---|---|---|---|
| access | advertise | conflict | impact |
| obvious | vary | vehicles | violent |

33 compound

| | | | |
|---|---|---|---|
| chemical | combined | decade | elements |
| intervene | middle | mixture | starve |

34 conform

| | | | |
|---|---|---|---|
| artificial | boiled | classic | comply |
| correspond | follow | novel | standards |

35 contaminate

| | | | |
|---|---|---|---|
| adjacent | apart | dirty | finance |
| germ | pollution | stick | water |

36 cycle

| | | | | |
|---|---|---|---|---|
| circuit | enlighten | processes | publish | |
| repeated | sadly | series | vast | |

37 deliberate

| | | | | |
|---|---|---|---|---|
| axis | conscious | debate | interview | |
| planet | planning | radio | slow | |

38 edit

| | | | | |
|---|---|---|---|---|
| arithmetic | film | pole | publishing | |
| revise | risk | surface | text | |

39 illuminate

| | | | | |
|---|---|---|---|---|
| brighten | clarify | currency | light | |
| playing | tangent | understand | width | |

40 magnitude

| | | | | |
|---|---|---|---|---|
| bulk | company | expert | importance | |
| range | section | size | usage | |

41 navy

| | | | | |
|---|---|---|---|---|
| defence | direct | finger | linguistic | |
| military | pole | port | sailor | |

42 relevance

| | | | | |
|---|---|---|---|---|
| achieve | appropriate | book | connected | |
| image | pertinent | pest | significance | |

43 restore

| | | | | |
|---|---|---|---|---|
| autumn | frighten | health | matrix | |
| mend | return | revive | terror | |

44 strata

| | | | |
|---|---|---|---|
| annual | final | hierarchy | layers |
| philosophy | rock | society | velocity |

45 superior

| | | | |
|---|---|---|---|
| advantage | convenient | excellent | forget |
| higher | pursue | rank | symptom |

46 tiny

| | | | |
|---|---|---|---|
| economic | extremely | leisure | magnitude |
| microscope | small | speech | synthetic |

47 utilize

| | | | |
|---|---|---|---|
| broad | consent | empire | employ |
| function | manipulate | peasant | use |

48 explicit

| | | | |
|---|---|---|---|
| aid | clear | expressed | frontier |
| moisture | precise | rotate | specify |

49 interlude

| | | | |
|---|---|---|---|
| break | constant | imply | interval |
| odd | period | purpose | short |

50 invoke

| | | | |
|---|---|---|---|
| ahead | ask | crops | fluid |
| justify | labour | legal | quote |